

## Advanced telemedicine technology for realizing Universal Medical Access

2023.10.11 wed 14:30-15:30

Place Annex Hall F204

In AIST, we are engaging and conducting various healthcare research and development for accomplishing Universal Medical Access society. In this seminar, we will introduce the scheme of New-generation medical treatment and diagnosis research laboratory, remote and automate diagnosis and advanced surgical assistance systems for extending healthy life expectancy as AIST engaging.

Coordinator : Director, Reserch Planning Office, Department of Life Science and Biotechnology, AIST **ABURATANI Sachiyo**

### 14:30-14:50 **Advanced medical and telemedicine/automation technology for realizing Universal Medical Access**

Director, New-Generation Medical Treatment and Diagnosis Rsearch Laboratory, AIST **MARUYAMA Osamu**

Our laboratory addresses social issues, particularly the declining birthrate and aging population, which may raise concerns regarding declining economic power due to a decrease in the workforce and widening health disparities between regions in Japan as it becomes the world's first super-aged society. To extend healthy life expectancy, it is crucial to realize Universal Medical Access, with which anyone anywhere in Japan can receive reliable medical care, which will enable the early detection of diseases and allow patients' social reintegration without compromising quality of life even after disease onset. We are working on basic research aiming to realize Universal Medical Access.

### 14:50-15:10 **Remoto robot technology for realizing Universal Medical Access**

Deputy Director, New-Generation Medical Treatment and Diagnosis Rsearch Laboratory, AIST **YOSHINAKA Kiyoshi**

Universal Medical Access (UMA) refers to the ultimate in medical accessibility, where anyone can access and provide quality medical and nursing care anytime, anywhere, under any circumstances, without obstacles. To enable the realization of UMA, we are conducting research and development of basic and applied technologies for medical devices that can be easily handled by anyone through remoto robot technology.

### 15:10-15:30 **Low-temperature atmospheric pressure plasma for immediate blood coagulation**

Group Leader, Research Institute for Advanced Electronics and Photonics, AIST **SHIMIZU Tetsuji**

Using plasma that is the fourth state of matter after solid, liquid, and gas, several researches have been conducted for biomedical applications. With low-temperature atmospheric plasmas, it is possible to provide a highly reactive surface treatment without thermal damage. There are several possible applications developed and tested, such as sterilization, cancer treatment, wound healing, and blood coagulation. In our group, a low-temperature atmospheric plasma equipment for blood coagulation has been developed. Different from the conventional high frequency coagulation equipment commonly used in surgery, the plasma equipment does not cause thermal damage and postoperative scarring on tissues. In the seminar, the basic performance and effectiveness of the plasma equipment will be discussed.